UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/898,713	07/23/2004	Siva R. Jasthi	2004P57003 US	3170

45113 7590 07/26/2017

Siemens Corporation
Intellectual Property Department
3501 Quadrangle Blvd Ste 230
Orlando, FL 32817

EXAMINER	
EVANS, KIMBERLY L	

ART UNIT	PAPER NUMBER
3629	

NOTIFICATION DATE	DELIVERY MODE
07/26/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPDadmin.us@siemens.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SIVA R. JASTHI and VENKATA N. MARRAPU

Appeal 2015–003738
Application 10/898,713
Technology Center 3600

Before ANTON W. FETTING, JOSEPH A. FISCHETTI, and MEREDITH C. PETRAVICK, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Siva R. Jasthi and Venkata N. Marrapu (Appellants) seek review under 35 U.S.C. § 134 of a Final Rejection of claims 1–21, the only claims pending in the application on appeal. This is the second time this application has come before the Board.[2] We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

---

[1] Our Decision will make reference to the Appellants' Appeal Brief ("App. Br.," filed September 26, 2014) and Reply Brief ("Reply Br.," filed February 18, 2015), and the Examiner's Answer ("Ans.," mailed February 3, 2015), and Final Office Action ("Final Act.," mailed April 4, 2014).

[2] *See* prior Appeal 2010-006068 (mailed Oct. 13, 2011).

The Appellants invented a way of evaluating the quality of product structures. Spec. para. 1.

An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below (bracketed matter and some paragraphing added).

> 1. A method for evaluating a bill of materials, comprising:
> [1] receiving, in a data processing system,
> a bill-of-materials listing including a plurality of items,
> each item represented by a node
> that represents a constituent part of a product in a hierarchical representation of the product;
> [2] receiving, in the data processing system,
> a bill-of-materials grading specification
> that includes at least one grading factor that is associated with at least one class of the nodes of the bill-of-materials listing,
> wherein each associated grading factor and class has a corresponding grading constraint and grading presentation definition;
> [3] evaluating the bill-of-materials listing, by the data processing system,
> by evaluating each of the plurality of items in the bill-of-materials listing
> according to the bill-of-materials grading specification;
> and
> [4] displaying results corresponding to the evaluation
> according to the grading presentation definition.

The Examiner relies upon the following prior art:

Callahan	US 2003/0204527 A1	Oct. 30, 2003
Sholtis	US 7,392,255 B1	Jun. 24, 2008

Claims 1–21 stand rejected under 35 U.S.C. § 101 as directed to non–statutory subject matter.

Claims 1–21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Callahan and Sholtis.

ISSUES

The issues of eligible subject matter turn primarily on whether the claims do more than abstract analysis. The issues of obviousness turn primarily on whether the bill of materials tools in the applied art describe embodiments within the scope of the claims.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Facts Related to Claim Construction

01. The disclosure contains no lexicographic definition of "bill-of-materials grading specification."

02. The disclosure does state that "[t]he disclosed BOM grading system evaluates the given BOM." Spec. para. 30.

03. The process of evaluating a given BOM based on "a Criteria" is called the BOM Grading. Spec. para. 31.

04. Grading factors address what can be evaluated. Grading constraints address how these are evaluated. Presentation addresses how results are presented to the user Spec. para. 38.

Facts Related to the Prior Art

Callahan

05. Callahan is directed to product information related data architectures that can be used to share product information across product families. Callahan para. 1.

06. Callahan describes a hierarchical product data model for storing product data in a memory associated with a computer, and in a persistent storage database, capable of bringing the product data model into computer memory for use by designers. The part used-on assembly information has an important role in product information. The product data model facilitates sharing of product information within a product family. Callahan para. 9.

07. A parent assembly holds information for associating the component with the parent assembly. Component-usages holds information relating to usages of the component and connecting a child part to its parent assembly. Logical component-usages hold information relating to logical usages of components and connect child component usages to their parent assembly. The parent assembly, component-usage, and logical component-usage are hierarchically interconnected. The product data model that is the subject of this invention consists of an interrelated set of components, component-usages and logical component usages. The invention is independent of any effectivity or applicability scheme, but can accommodate multiple types of such schemes. Callahan para. 11.

08. The component usage nodes 14 and the logical component usage nodes 18 are labeled with applicability attributes that determine whether they apply to a given configuration. Callahan para. 35.

09. An explicit applicability attribute could be associated with each of the usage nodes specifying which configurations include each particular usage node. Alternatively, option attributes can be associated with the usage nodes and their applicability determined by an option expression developed for each product configuration. Callahan para. 39.

10. The applicability object 174 represents a general, notional mechanism for expressing to which particular configuration each logical component usage 172 and component usage 170 is applicable. Fifth relationship 184 and sixth relationship 186 carry that applicability information, and seventh relationship 188 connotes the fact that for some applicability schemes the parent assembly configuration can directly control usage applicability. Callahan para. 57.

Sholtis

11. Sholtis is directed to management of information. Sholtis 1:16–17.

12. Tools that are available to end-users may facilitate searching for parts in data sources 414–422, viewing components for purposes of placing them into schematics, optimizing a bill of materials (BOM) (e.g., verifying that the BOM includes clean and orderable parts). Sholtis 6:52–56.

13. A user can send a project bill-of-material (BOM) file to services that return Price & Availability Optimization and Design-for-Manufacturability Grading. Sholtis 44:67–45:3.
14. SpinMatcher allows a user to validate the integrity of Bills of Materials (BOMs) by comparing Manufacturer Part Numbers (MPNs) from input BOMs and verifying that the MPN is correct and the part is orderable. Sholtis 45:57–60.
15. SpinServices is a set of services that allow a user to get information on the Pricing and Availability of each part in a Bill of Materials (BOM). Sholtis 48:11–13.
16. Rules can be defined for presentation. For example, the presentation rules may show results based upon user preferences. In addition, the presentation rules may show the output based upon a defined presentation algorithm. Sholtis 51:41–44.
17. Example filtering services that may be implemented for EMS include: (a) Bill of Material Mapping for UPN, OPN (Original Part Number), MPN; (b) BOM Normalization/Standardization; (c) BOM Enrichment; and/or (d) filtering to merge EMS AVL with OEM AVL. In addition to these filtering services, example filtering services for the distributor may include BOM Grading and Quoting Services. Sholtis 54:57–63.

ANALYSIS

Claims 1–21 rejected under 35 U.S.C. § 101 as directed to non–statutory subject matter

The Supreme Court

> set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, . . . determine whether the claims at issue are directed to one of those patent-ineligible concepts. . . . If so, we then ask, "[w]hat else is there in the claims before us?" . . . . To answer that question, . . . consider the elements of each claim both individually and "as an ordered combination" to determine whether the additional elements "transform the nature of the claim" into a patent-eligible application. . . . [The Court] described step two of this analysis as a search for an "'inventive concept'"—*i.e.,* an element or combination of elements that is "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself."

Alice Corp., Pty. Ltd. v CLS Bank Intl, 134 S. Ct. 2347, 2355 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)).

To perform this test, we must first determine whether the claims at issue are directed to a patent-ineligible concept. The Examiner finds claim 1 to be directed to evaluating a bill of material. Ans. 8–9.

While the Court in *Alice* made a direct finding as to what the claims were directed to, we find that this case's claims themselves and the Specification provide enough information to inform one as to what they are directed to.

The preamble to claim 1 recites that it is a method of evaluating a bill of materials. The steps in claim 1 result in displaying an evaluation. The Specification at paragraph 1 recites that the invention relates to methods for evaluating the quality of product structures, consistent with the Examiner's

finding. Thus, all this evidence shows that claim 1 is directed to evaluating information, i.e., information analysis.

It follows from prior Supreme Court cases, and *Bilski* in particular, that the claims at issue here are directed to an abstract idea. Like the risk hedging in *Bilski*, the concept of information analysis is a fundamental analytic practice long prevalent in our system of commerce and professional disciplines. The use of information analysis is also a building block of all complex endeavors. Thus, information analysis, like hedging, is an "abstract idea" beyond the scope of § 101. *See Alice Corp. Pty. Ltd.,* 134 S. Ct. at 2356.

As in *Alice Corp. Pty. Ltd.*, we need not labor to delimit the precise contours of the "abstract ideas" category in this case. It is enough to recognize that there is no meaningful distinction in the level of abstraction between the concept of risk hedging in *Bilski* and the concept of information analysis at issue here. Both are squarely within the realm of "abstract ideas" as the Court has used that term. *See Alice Corp. Pty. Ltd.,* 134 S. Ct. at 2357.

Further, claims involving data collection, analysis, and display are directed to an abstract idea. *Elec. Power Grp., LLC v. Alstom S.A.,* 830 F.3d 1350, 1353 (Fed. Cir. 2016) (holding that "collecting information, analyzing it, and displaying certain results of the collection and analysis" are "a familiar class of claims 'directed to' a patent ineligible concept"); *see also In re TLI Commc'ns LLC Patent Litig.,* 823 F.3d 607, 611 (Fed. Cir. 2016); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1093–94 (Fed. Cir. 2016). Claim 1, unlike the claims found non-abstract in prior cases, uses generic computer technology to perform data collection, analysis, and

display and does not recite an improvement to a particular computer technology. *See, e.g.*, *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314–15 (Fed. Cir. 2016) (finding claims not abstract because they "focused on a specific asserted improvement in computer animation"). As such, claim 1 is directed to the abstract idea of receiving, analyzing, and displaying data.

The remaining claims merely describe input parameters and output options. We conclude that the claims at issue are directed to a patent-ineligible concept.

The introduction of a computer into the claims does not alter the analysis at *Mayo* step two.

> the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea "while adding the words 'apply it'" is not enough for patent eligibility. . . . Nor is limiting the use of an abstract idea "'to a particular technological environment.'" . . . Stating an abstract idea while adding the words "apply it with a computer" simply combines those two steps, with the same deficient result. Thus, if a patent's recitation of a computer amounts to a mere instruction to "implement[t]" an abstract idea "on . . . a computer," . . . that addition cannot impart patent eligibility. This conclusion accords with the pre-emption concern that undergirds our § 101 jurisprudence. Given the ubiquity of computers . . . , wholly generic computer implementation is not generally the sort of "additional feature[e]" that provides any "practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea] itself."

Alice Corp. Pty. Ltd., 134 S. Ct. at 2358 (internal citations omitted).

"[T]he relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea . . . on a generic computer." *Alice Corp. Pty. Ltd.,* 134 S. Ct. at 2359. They do not.

Taking the claim elements separately, the function performed by the computer at each step of the process is purely conventional. Using a computer to receive data, evaluate the data according to defined criteria, and display the results amounts to electronic data query and retrieval—one of the most basic functions of a computer. All of these computer functions are well-understood, routine, conventional activities previously known to the industry. In short, each step does no more than require a generic computer to perform generic computer functions.

Considered as an ordered combination, the computer components of Appellants' method add nothing that is not already present when the steps are considered separately. Viewed as a whole, Appellants' method claims simply recite the concept of information analysis as performed by a generic computer. To be sure, the claims recite doing so by advising one to review a manufacturing bill of materials for parameters referred to as grading specifications and evaluating and displaying the bill of materials according to those parameters. But this is no more than abstract conceptual advice on the parameters for such analysis and the generic computer processes necessary to process those parameters, and do not recite any particular implementation.

The method claims do not, for example, purport to improve the functioning of the computer itself. Nor do they effect an improvement in any other technology or technical field. The 15 pages of Specification spell out different generic equipment and parameters that might be applied using this concept and the particular steps such conventional processing would entail based on the concept of analyzing data under different criteria. Much of the Specification is a generic manufacturing system tutorial that discusses

such hoary concepts as adding, deleting, and editing data. They do not describe any particular improvement in the manner a computer functions. Instead, the claims at issue amount to nothing significantly more than an instruction to apply the abstract idea of information analysis using some unspecified, generic computer. Under our precedents, that is not enough to transform an abstract idea into a patent-eligible invention. *See Alice Corp. Pty. Ltd.,* 134 S. Ct. at 2360.

As to the structural claims, they

> are no different in substance from the method claims. The method claims recite the abstract idea implemented on a generic computer; the system claims recite a handful of generic computer components configured to implement the same idea. This Court has long "warn[ed] . . . against" interpreting § 101"in ways that make patent eligibility 'depend simply on the draftsman's art.'

Alice Corp. Pty. Ltd., 134 S. Ct. at 2360 (internal citation omitted).

We are not persuaded by Appellants' argument that

> the Examiner's Answer attempts to ignore that this claim describes a specific, computer-implemented process that describes how a data processing system can evaluate a BOM with a specific format, against a grading specification that has specific grading factors, classes, grading constraints, and grading presentation definitions, and display the results according to the grading presentation definition.
>
> The Office Action alleges that these are "generic computer functions that are well-understood, routine, and conventional activities previously known to the pertinent industry." This is clearly incorrect, as demonstrated in both the Appeal Brief and the arguments above – there is no art of record that shows the specific limitations of the claims are known in the art at all, much less that they are "well-understood, routine, and conventional."

Reply Br. 51–52. The issue is not whether the labels of the data operated upon are novel, but whether the operations performed are old and well

known and whether their combination is an inventive concept. Appellants do not contend that receiving and evaluating data is not old and well known. Indeed, there is little more abstract than receiving and evaluating data. Simply directing a computer to perform the analysis is insufficient to transform an abstract idea into an inventive concept. The meaning of the result of such analysis is discernable only in the mind of the beholder. The results themselves are pure data, again an example of data processing and little more.

Appellants again go on to contend that the processes are novel, but the argument surrounds the data labels and not the processes themselves. *Id.* A data label is itself an abstraction.

Claims 1–21 rejected under 35 U.S.C. § 103(a) as unpatentable over Callahan and Sholtis

We adopt the Examiner's findings and analysis from the Final Office Action at pages 3–8 and Answer at pages 10–42 and reach similar legal conclusions. We now address the Reply Brief arguments.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest a bill-of-materials grading specification that includes at least one grading factor that is associated with at least one class of the nodes of the bill-of-materials listing, as claimed. Reply Br. 14–19.

Sholtis explicitly describes several tools for bill of materials grading. The Specification does not lexicographically define a bill-of-materials grading specification, and the plain meaning is some specification of bill-of-materials grading. Thus, any such tool in Sholtis is such a specification

because the tool's architecture specifies its operation. Sholtis also describes the tool's output for presentation. Thus, the issues devolve to whether the recited analysis is described by the art.

The key here is that the independent claims recite no implementation and do not narrow the manner in which the analysis is performed. All that is recited is that there is a grading factor somehow associated with a class of the nodes of the bill-of-materials listing, where the grading factor and class has a corresponding grading constraint and grading presentation definition. As to the analysis itself, the claims recite it is done by component according to the specification. The availability grading factor is associated with the class of applicability by the bill of materials data. The tool output architecture in Sholtis specifies its presentation definition.

As the Examiner finds, Callahan classifies its bill of material nodes according to applicability. This results in applying the tools in Sholtis to each such class of applicability in a bill of material. The grading factor of availability with a constraint of being available Sholtis describes, thus, meets the recitation of the data employed in the claims.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that each associated grading factor and class has a corresponding grading constraint and grading presentation definition, as claimed. Reply Br. 20–23. The independent claims recite at least one factor and class. Further, even with plural factors and classes, the claims do not preclude a many to one relationship, or a relationship that changes with the tool employed.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest evaluating the bill-of materials listing

by evaluating each of the plurality of items in the bill-of materials listing according to the bill-of-materials grading specification, as claimed. Reply Br. 24–30. Availability is on a component basis.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the grading specification includes a grading schema that identifies an evaluation to be performed based on a class of user requesting the evaluation and the at least one grading factor, as claimed. Reply Br. 31–34. The claims do not recite such a schema. The claims are silent as to how the evaluation is performed, and, therefore, are silent as to identifying a particular evaluation technique.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the grading constraint identifies how aspects of the bill-of-materials listing are evaluated, as claimed. Reply Br. 35–37. Again, the claims do not recite how aspects of the bill-of-materials listing are evaluated. The claims only refer to doing so according to the bill-of-materials grading specification, which as we find *supra* occurs inherently by virtue of the grading tool in Sholtis.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the grading factor identifies aspects of the bill-of-materials listing that can be evaluated, as claimed. Reply Br. 38–40. Again, the claims do not recite how aspects of the bill-of-materials listing are evaluated and so does not identify aspects of the bill of materials that can be evaluated. Any item of data is amenable to evaluation, given the appropriate criterion. Thus, the availability factor in Sholtis is amenable to evaluation of whether a component is available.

We are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the grading presentation definition defines how the results are presented to a user, as claimed. Reply Br. 41–42. Again, no implementation is recited, and so the programming in the output process from evaluating grading of availability described by Sholtis is within the scope of a grading presentation definition.

As to claim 6, we are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the evaluation is performed by comparing properties of each item against the grading specification, wherein the properties include at least one of a life cycle state or an end of life date, as claimed. Reply Br. 43–45. Availability is an example of a life cycle state.

As to claim 7, we are not persuaded by Appellants' argument that the proposed combination does not teach or suggest that the bill-of materials listing includes relationships between items, and wherein the relationships include at least one of a supplier status, a distributer status, or an outstanding problem report, as claimed. Reply Br. 46–48. Availability is an example of supplier status, as in the supplier can make the component available or cannot.

CONCLUSIONS OF LAW

The rejection of claims 1–21 under 35 U.S.C. § 101 as directed to non–statutory subject matter is proper.

The rejection of claims 1–21 under 35 U.S.C. § 103(a) as unpatentable over Callahan and Sholtis is proper.

DECISION

The rejections of claims 1–21 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED